Martian rocks show impacts

Images from the Hubble Space Telescope and spacecraft such as Mars Global Surveyor have shown that major changes take place in the atmosphere and polar caps of Mars. But small-scale changes also seem to be common according to a recent report in *Science*.

A chip off the old block: 'Stimpy' shows signs of an asteroid impact. Photo: NASA/JPL

After noticing small indentations in rocks such as Stimpy, Yogi and Frog, which were imaged during the Mars Pathfinder mission, scientists at NASA's Johnson Space Centre have tried to replicate their appearance. By bombarding boulders in a laboratory with small rocks, they found that the results looked similar to the battered boulders at the Pathfinder landing site in Ares Vallis.

They deduce that impacts by small meteorites may be continuously shaping the Martian surface. Such impacts are likely to be more numerous than on Earth, because fewer incoming meteorites burn up in the thin atmosphere. Previously, scientists have generally assumed that erosion by wind and water were the key forces that shaped the surface of the Red Planet.

Peter Bond

Cosmic expansion rethink

Many cosmologists who have been quick to accept evidence that a bizarre antigravity force is accelerating the expansion of the Universe may have to think again according to a report in *New Scientist*.

Much of the evidence favouring the existence of this so-called cosmological constant has come from observations of distant supernovae. Assuming that these cosmic explosions have similar luminosities, it should be a straightforward process to ascertain their distances from their apparent brightness. Using such evidence, astronomers have deduced that very distant exploding stars are much fainter than expected, and hence much further away than expected.

However, supernovae may not be the ideal milestones after all. Some researchers have previously suggested that older, more distant supernovae may be inherently dimmer than those close by.

The latest twist comes from Dale Howell from the University of Texas at Austin. Howell says that the central regions of galaxies on older photographic plates are usually overexposed, so supernovae are less likely to be discovered there than if modern digital imaging techniques have been used.

This is a problem because supernovae in the centre of galaxies vary much more in brightness than those on the edge. This could lead to a selection bias. Closer supernovae discovered in outer regions of galaxies by traditional photography might have different properties from more distant supernovae near galactic centres which have been discovered by digital techniques. This could result in a systematic error in the data upon which distance estimates are based.

Peter Bond

Near-Earth asteroid in a spin

Spacewatch astronomers at the University of Arizona have found the fastest spinning object in the Solar System yet discovered. Asteroid 1998 KY26 spins once every 10.7 minutes, 10 times faster than any other known object and 60 times faster than the average for all other asteroids.

1998 KY26 was discovered by Tom Gehrels on May 28, 1998, with the aid of the 36 inch (0.9 m) Spacewatch telescope at Kitt Peak. Over the next week or so, as the object passed within half a million miles of Earth, a number of observatories measured changes in its brightness. At the same time, Steven Ostro of JPL used the 230 ft (70 m) Goldstone antenna of NASA's Deep Space Network to bounce radio signals off its surface. By combining the data from the various observing groups, Petr Pravec of Ondrejov Astronomy Institute in the Czech Republic was able to determine the precise rotation rate.

SOHO comet find

Jonathan Shanklin, of the British Antarctic Survey and a regular contributor to *Astronomy Now*, has discovered a comet in images from the LASCO C3 camera aboard the SOHO solar observatory.

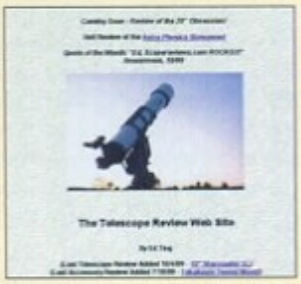
Jon found Comet 1999 S1 (SOHO) in a sequence of images downloaded from the internet.

"I was quite excited when I first spotted the object, which was sufficiently obvious that I was sure that someone else must have reported it," he writes. "I was even more elated when I heard that no-one else had reported it and have remained astonished ever since. I really had discovered a comet."

Internet sites of the month

***Astronomy Now*'s monthly guide to astronomical sites on the information superhighway by David Johnson.**

Finding software can sometimes be frustrating, ranging from FTP sites to an authors own page. The Softseek web site has a good collection of astronomical related items – more than 60 at the time of visiting. There is probably something for everyone, ranging from freeware screensavers to more elaborate shareware programs:
http://lrbcg.softseek.com/Education_and_Science/Astronomy/



I always like to read reviews, even if I'm not going to buy the product mentioned. The Telescope Review Web Site has more than 60 telescope reviews, plus articles on eyepieces, Barlow lenses and binoculars. Concentrating on the practical aspects of using telescopes the site includes most of the popular telescopes available:
http://www.scopereviews.com/

If you've not heard of 'Pipehenge', you've not visited The Auckland Observatory and Stardome Planetarium site. New Zealand School children have the opportunity to look at meteorites, rocket launching, telescope making as well as visiting a very well equipped planetarium:
http://www.stardome.org.nz

If you know of a site that deserves a mention, please e-mail details to davidj@astromag.co.uk

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